REMARKS

Claims 41-43 have been canceled without prejudice or disclaimer. Claims 40 and 44 have been amended to correct formalities.

Applicants have amended the specification at page 29, Table 21 to correct an inadvertent typographical error. Support for this amendment appears, e.g., in the data of Table 21 wherein data for AA EG II is provided.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

I. Withdrawn Objections and Rejections

Applicants acknowledge with appreciation the Examiner's reconsideration and withdrawal of the prior claim objections and claim rejections under 35 U.S.C. 112, second paragraph.

II. The Rejection of Claims 28 and 31-50 under 35 U.S.C. 103

While the Examiner has withdrawn the prior rejection under 35 U.S.C. 103, claims 28 and 31-50 now stand rejected under 35 U.S.C. 103 as allegedly being unpatentable over Laroye (EP 0 910 620 B1, "Laroye") in view of Bedford et al. (USPN 6,562,340 B1, "Bedford") and further in view of Kofod et al. (USPN 6,197,564, "Kofod"). The Examiner states that Laroye teaches a process for production of a mash having enhanced filterability, preparing a mash in the presence of a mixture of enzyme activities and filtering the mash to obtain a wort and a composition comprising at least beta-glucanase activity, endo-xylanase activity, preferably 1,4-beta-endoxylanase activity and a mixture of beta-glucanase and endo-xylanase. The Examiner cites Bedford for the proposition that a person of ordinary skill in the art would have known that different enzyme preparations showing different levels of xylanase and endoglucanase activity could have been prepared. The Examiner states that Kofod teaches a xylanase derived from *A. aculeatus*, a xylanase of GH family 10. The Examiner alleges that a person of ordinary skill in the art could have been motivated to substitute the endo-xylanase and endoglucanase enzymes in the composition and method as taught by Laroye with the endo-xylanase of Kofod and/or endoglucanase as taught by Bedford in order to provide a process for production of a mash having enhanced filterability with the predictable result of hydrolyzing the beta-glucans in the mash, reducing the viscosity and less clogging of filters. This rejection is respectfully traversed.

It is well settled that the Patent and Trademark Office has the burden to establish a *prima facie* case of obviousness. *In re Rijckaert*, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993); *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). "In determining whether a case of prima facie obviousness exists, it is necessary to ascertain whether the prior art teachings would appear to be sufficient to one of ordinary skill in the art to suggest making the claimed substitution or other modification." *In re Lalu*, 223 U.S.P.Q. 1257, 1258 (Fed. Cir. 1984). "The mere fact that the prior art *could* be so modified would not have made the modification obvious unless the prior art *suggested* the desirability of the modification." *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (emphasis added). "[T]he examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998).

Laroye purports to describe a process for preparation of worts with increased yield and improved filterability by using a mixture of enzyme activities. See Laroye at [0009]. Laroye states that when wort is made in the presence of a mixture of enzyme activities comprising beta-glucanase activity, alpha-L-arabinofuranosidase activity and preferably endo-beta-1,4-xylanase, a liquefied and saccharified mash is obtained which can be filtered much easier than mash obtained using beta-glucanases alone or mixtures of beta-glucanases and endo-xylanase. See id. at [0015].

As acknowledged by the Examiner, Laroye does not teach or suggest a xylanase of GH family 10 and endoglucanase of GH family, let alone the particular amounts of enzymes in % w/w of the total, as required by the claims. Nor do either of Bedford or Kofod cure this defect.

Bedford relates to an enzyme feed additive and in particular to such an additive which can decrease the feed conversion ratio of a cereal-based feed and/or increase digestibility. Bedford at col. 1, lines 6-9. Bedford purports to identify those specific components of the cellulose enzyme system, and their relative amounts, which advantageously improve the feed conversion ration of a cereal-based feed and/or increase its digestibility. See id. at col. 3, lines 32-37. Bedford reports that different results are obtained between in vitro and in vivo testing. In the in vitro testing of Reference Example 3, the viscosity reducing activity of whole cellulase was higher than that for the enriched endoglucanase preparations. See id. at col. 24, lines 32-37, col. 15, lines 12-14 and col. 22, lines 19-22. In contrast, the in vivo test results of Example 1 indicate that each of the enzyme preparations tested has at least one advantageous characteristic of improved body weight gain, feed conversion ratio and/or reduced viscosity in the gastrointestinal region as compared to whole cellulase at both concentrations tested. See id. at col. 24, lines 38-45. However, nowhere does

Bedford teach or suggest the particular amounts of enzymes in % w/w of the total, as required by the claims.

Kofod relates to enzymes termed xylanase I, xylanase II and xylanase III, each exhibiting xylanase activity. See Kofod at col. 3, lines 16-20. However, nowhere does Kofod teach or suggest the particular amounts of enzymes in % w/w of the total, as required by the claims.

Accordingly, none of Laroye, Bedford and/or Kofod, either alone or in combination, teach or suggest the methods and compositions of Applicants' claims.

Nevertheless, Applicants respectfully submit that the specification as filed demonstrates improved mashing and filtration performance by use of enzyme combinations according to the invention as compared to ULTRAFLO® L and/or VISCOZYME® L, i.e., commercial multicomponent enzyme compositions. See, e.g., Example 4; see also Enzymes at page 12, lines 7-15. For example, Table 21 demonstrates that a combination of *Aspergillus aculeatus* xylanase II (i.e., an exemplary GH10 xylanase) and *Aspergillus aculeatus* endoglucanase EG III (i.e., an exemplary GH12 endoglucanase) had a significant effect on beta-glucan, viscosity and filterability. See page 29, lines 1-3. As another example, Table 22 demonstrates that a composition comprising VISCOZYME®, *Aspergillus aculeatus* EG III and *Aspergillus aculeatus* xylanase II had a significantly more positive effect on beta-glucan, OD, extract recovery and viscosity than had a dosage of 7.5 times the conventional standard dosage of VISCOZYME®. See page 29, lines 4-9.

For the foregoing reasons, Applicants submit that the claims overcome the rejection under 35 U.S.C. 103. Applicants respectfully request reconsideration and withdrawal of the rejection.

III. Conclusion

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application. Should any fees be due, please charge deposit account no. 50-1701 of Novozymes North America Inc.

Respectfully submitted,

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